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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,356	11/19/2003	Ralph Hobmeyr	8540G-000210	7713

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EXAMINER	
WILLS, MONIQUE M	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
07/28/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/717,356	HOBMEYR, RALPH	
	Examiner	Art Unit	
	Monique M. Wills	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11/19/03* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This Office Action is responsive to the Amendment filed April 28, 2008. The rejection of claims 1-8 under 35 U.S.C. 103(a) as being unpatentable over Vasileiadis et al. U.S. Pub. 6,919,062 in view of Lee U.S. Pub. 2005/0130003 is overcome. However, claims 1-8 are newly rejected as follows:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vasileiadis et al. U.S. Pub. 6,919,062 in view of Kato et al. U.S. Pub. 2004/0157099.

With respect to **claim 1**, Vasileiadis et al. teach a fuel cell system comprising a conduit through which cooling fluid flows. See the Abstract. The cooling fluid (cool gas) is recycled through a permreactor-separator, which comprises a hydrogen permeable tube (2), wherein hydrogen within the coolant fluid permeates through the later to reduce hydrogen content in the cooling fluid. See col. 3, line 65 to col. 4, line 5.

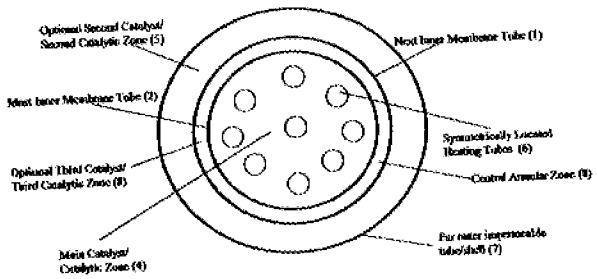

Fig. 1

With respect to **claim 2-4**, the system further comprises a support layer (1) disposed concentric to the hydrogen-permeable tube (2). See Figure 1. The support layer (1) is a permeable membrane therefore providing a breathable (claim 3) mesh

(claim 4) hydrogen permeates. With respect to **claim 5**, a second layer of hydrogen-permeable material (col. 20, lines 65-68 discloses multiple permeable tubes employed in the permreactor). With respect to **claim 6**, the central annular zone serves as support between the layers of hydrogen permeable material. See Figure 1. With respect to **claim 7**, the second catalytic zone (5) serves as a fluid-permeable protective layer disposed about the conduit, protecting the conduit from debris. See Figure 1. With respect to **claim 8**, the hydrogen permeable tub (1) has a catalyst coating to induce a reaction between hydrogen and oxygen to produce water. See Figure 1 and col. 3, lines 30-68.

Vasileiadis does not expressly disclose the fuel cell stack in heat transfer communication with the cooling fluid (claim 1). The reference is also silent to coolant passages passing between the membrane of the fuel cell.

Kato teaches that it is well known in the art to employ coolant passages between the membranes of fuel cells. See Figure 1.

However, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the fuel cell stack in heat transfer communication with the cooling fluid in order to control the stack temperature thereby improving fuel cell operation efficiency.

With respect to employing coolant passages between the membrane of the fuel cell, it would have been obvious to employ the cooling arrangement of Kato, in the fuel cell of Vasileiadis, in order to control stack temperature and reactivity between the fuel cells

Response to Arguments

Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Patrick Ryan, may be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).